STAFF'S PROPOSED AVOIDED COST METHODOLOGY
FOR PROJECTS LARGER THAN ONE MEGAWATT
CASE NO. IPC-E-95-9

Introduction

On January 31, 1995, the Idaho Public Utilities Commission issued Order Nos. 25882, 25883, and 25884 which required that utilities utilize their Integrated Resource Plans (IRPs) to establish avoided cost rates for projects larger than one megawatt. The Commission stated the following in its orders:

> We believe that the adoption of the least cost planning methodology is consistent with our goal of maintaining a regulatory climate that allows our electric utilities to retain their advantageous posture in a marketplace that is likely to become increasingly competitive. This will ultimately work to the advantage of ratepayers in the form of rates lower than would otherwise be in effect. By treating QFs [Qualifying Facilities] in the same manner as utility acquired resources, we are further removing the shelter that has been constructed around the QF industry. Requiring those projects to prove their viability by market standards insures that utilities will not be required to acquire resources priced higher than would result from a least cost planning process. Ratepayers will not be disadvantaged and QFs will be treated fairly and consistently with the requirements and goals of PURPA.

See, e.g. Order No. 25884 at page 6.

In accordance with Order No. 22299, all utilities are required to prepare IRPs biennially. The following elements are included in the development of the IRP:

1. Integrated evaluation of all resource options;
2. Least cost selection criterion for the resource plan;
3. Inclusion of environmental impacts and external costs of resources;
4. Analysis of planning uncertainties and risks; and
5. Public involvement in the planning process.

An IRP forms the basis for utility decisions regarding the timing, quantity, and type of future resource acquisitions. The end result of integrated resource planning is a set of resource options which represent the least cost means of meeting expected future loads considering a reasonable range of planning uncertainties and risks. The set of options with the highest probability of having the least cost, and which has an acceptable level of risk, is usually referred to as the "base case" plan. The base case plan is the starting point of the analytical process described in this document for determining project-specific avoided cost rates for QF projects larger than 1 MW.

In the past, utilities have submitted IRPs to the Commission for filing, but no formal process has been in place for detailed review or approval of the IRPs. However, as a result of their increased utilization and importance as something other than a planning document, utilities should expect their plans to be scrutinized more carefully in the future. The Commission Staff intends to conduct thorough reviews of the plans, and anticipates that hearings may be held to provide an opportunity to seek comment. As in the past, utilities should not be bound to follow their IRP without exception. In fact, when good cause is shown, they should be expected to deviate from it. But absent good cause, they should now expect to be held to it more closely. More importantly, the IRP will establish the standard against which all resource acquisitions will be judged, both utility and non-utility owned alike.

Public participation is required in the preparation of utility IRPs. Developers and their representatives shall be welcome to participate in any public meeting related to the development of a utility IRP. It is the utility's responsibility to offer invitations to participate to a broad cross section of interested parties. The responsibility to actually participate lies with the interested parties.

The opportunity for developers or other interested parties to ultimately influence the calculation of avoided cost and the rates for QF projects that are derived from that

calculation, is in the development of a utility's IRP, not in the application of the avoided cost methodology. The IRP is the source of all inputs used in the calculation of avoided costs. It is the real basis for

calculating avoided cost rates. Once the avoided cost methodology is established, Staff does not expect a hearing or other formal Commission proceeding to be initiated each time a utility's avoided costs are calculated.

General Methodology

PURPA defines avoided cost as "the cost to an electric utility of electrical energy or capacity or both which, but for the purchase from such cogenerator or small power producer, such utility would generate itself or purchase from another source" *18 CFR, § 292.101*.

As explained by FERC:

> This definition is derived from the concept of "the incremental cost of alternative electric energy" set forth in section 210(d) of PURPA. It includes both the fixed and the running costs on an electric utility system which can be avoided by obtaining energy or capacity from qualifying facilities. One way of determining avoided cost is to calculate the total (capacity and energy) costs that would be incurred by a utility to meet a specified demand in comparison to the cost that the utility would incur if it purchased energy or capacity or both from a qualifying facility to meet part of its demand and supplied its remaining needs from its own facilities. The difference between these two figures would represent the utility's net avoided cost. In this case, the avoided costs are the excess of the total capacity and energy costs of the system developed in accordance with the utility's optimal capacity expansion plan, excluding the qualifying facility, over the total capacity and energy costs of the system (before payment to the qualifying facility) developed in accordance with the utility's optimal capacity expansion plan including the qualifying facility. (Order No. 69 [45 Fed. Reg. 12,216, 1980]).

In the proposed methodology, the avoided cost of a QF project is determined as the cost which the utility would avoid if it purchased power from the QF, rather than

acquiring the same power from the resources selected in its base case resource plan. Put another way, the avoided cost

of the QF project is the difference in the present value of revenue requirements (PVRR) between the base case resource plan and a modified resource plan that includes the QF resource. The avoided cost determination involves the following steps:

1. An IRP is prepared for the utility. The IRP should consider a range of load forecasts for various sets of possible economic conditions. The IRP should also consider all possible resources for meeting load, both supply side and demand side. In addition, consideration should be given to the risks and uncertainties associated with each scenario examined. The least cost combination of resources is selected to meet each scenario. The most likely scenario is identified as the base case plan.

2. An initial simulation analysis using a power supply and/or capacity expansion model chosen by the utility is used to calculate the PVRR of the base case resource plan over the lifetime of the proposed QF contract.

3. The proposed QF resource is added to the base case resource plan during all years of the proposed contract. The required description of the QF project includes all data and information needed to model the intended dispatchable or non-dispatchable operation of the project on the power supply system (see pps. 9-10 for a list of data and information needed from QFs).

4. A second simulation analysis, including the QF resource, is performed which results in an adjustment of the amount and/or timing of the new resources in the base case plan. The modified plan including the QF purchase is constructed to maintain resource adequacy and system reliability equivalent to that of the base case plan.

5. The PVRR of the modified resource plan including the QF is calculated over the full term of the QF contract, excluding the total purchase costs of the QF

resource itself.

6. Finally, the present value of the QF project avoided cost is calculated by subtracting the PVRR of the modified plan, with costs of the QF set to zero, from the PVRR of the base case resource plan.

7. Rates for capacity and energy from the QF project can now be developed for which, on a present value basis, the expected payments to the QF are equal to the project's avoided cost over the life of the contract.

IRP Data for Avoided Cost Calculations

Many of the same variables must be chosen and many of the same assumptions must be made by each utility in the development of their IRP. For example, each utility must make assumptions about inflation, the price of natural gas, or the cost of building a coal plant. Some planning variables will probably be the same for all utilities, but many will be different. In the past, the Commission has specifically determined both generic and company-specific variables used to calculate avoided cost for large projects. With implementation of the IRP methodology, the Companies will be responsible for determining these variables. As long as the values and assumptions fall within a reasonable range, utilities are free to choose values most appropriate for their own situation. It follows then, that different utilities will likely assume different values for the same variables. No variables will be considered generic; all variables will be utility specific, as are the utilities' IRPs. In granting utilities the freedom to select their own variables, utilities should be aware that they will be required to analyze their own resources on an equal footing with QF resources.

Portfolio Resources

The resource portfolio of each utility should include a variety of both supply and

demand side resources. Market purchases also represent a future supply option, and will likely comprise an increasingly larger portion of utilities' resources in the future. In fact, for some utilities, market purchases may constitute the primary source of new resources. The cost of market resources, to the extent a utility relies on them, should be one component in determining utilities' avoided costs. However, in order for market resources to be considered in the determination of avoided costs in an IRP-based methodology, those market resources must be included in the IRP. Any market purchases made that are not anticipated in the IRP cannot be used in the calculation of avoided costs. However, due to the fact that Pacificorp's RAMPP-4 calibration of its IPM model does not provide for the IPM's calculation of avoided costs, Pacificorp will be allowed to propose modifications to the IPM calibrations for the purpose of determining avoided costs, subject to Commission approval in Case No. IPC-E-95-9.

Predicting the price and availability of market resources, particularly in the long term, is difficult and uncertain. Consequently, forecasts made in the IRP should be firmly based on sound reasoning and analysis. The degree of planned reliance on market resources should be a matter of interest to ratepayers, shareholders, the Commission and the public. Review of the utilities' planned reliance on the market however should occur in the context of an IRP filing, not in an avoided cost proceeding.

Demand side resources to which the utility has made a firm commitment should be considered as reductions in the load forecast rather than as supply side resources, in part, to discourage double counting.

Load and Resource Forecasts

Forecasts of electricity load growth are made by each utility at two-year intervals as a part of IRP filings. These forecasts serve as the basis for avoided cost calculations. Staff contends that only known, measurable, and easily documented

changes should be made to the forecasts during the interim periods between required filings. For example, discrete changes in load that could be traced to the addition or loss of a single major customer would be a known, measurable, and easily documented change. The signing or expiration of a power sales or exchange agreement would also be a known, measurable, and easily documented change, as would the signing of a new QF contract. On the other hand, a load change due to population growth may be known, but would not be easily measured or documented.

Updating IRP Data

For the most part, utilities' resource plans as set forth in their IRPs should guide resource acquisition activities, including the resource cost effectiveness and avoided cost determinations, until replaced by subsequent IRPs. One of the goals of this avoided cost methodology is to achieve a dynamic resource evaluation process that recognizes changes in loads, technologies, costs, availabilities, and economic conditions so that utilities' avoided costs are accurately determined. However, QF developers seek to maintain some stability of avoided cost rates so that they are able to plan projects with some degree of certainty. In addition, the public must have the opportunity to participate in the planning process to provide input regarding variables that are ultimately used in each utility's IRP.

To achieve some balance between these competing objectives, this methodology allows periodically scheduled changes to some variables, while keeping other variables fixed between IRP filings. In essence, there will be a core set of variables that are used in the IRP and in the determination of avoided cost rates, but a subset of those variables will be changed periodically for the purpose of accurately calculating avoided costs. Every two years, a new IRP will be filed with new core variables and variables that will be adjusted periodically.

Generally, variables which are acquired from independent third party sources

and which are updated at regular intervals can be adopted by utilities for use in avoided cost calculations. However, the same source must be consistently used. Any change in the source of the data must also be agreed to by the Commission. Semi-annual updates will be allowed for the following based on verifiable forecasts:

- Escalation rates for capital costs;
- Escalation rates for O&M expenses;
- Escalation rate for fuel prices;
- Fuel prices.

If multiple sources are used to establish values for these variables, such as for gas prices, or if a utility wishes to make adjustments to values in consideration of regional circumstances, the utility should propose the sources and adjustment mechanisms at the time of their next IRP filing for consideration by the Commission. The utility should consistently use the same sources and adjustment mechanisms in the future for determining avoided cost rates unless changes are authorized by the Commission.

At such time as easily verifiable information is readily available from independent third party sources, the following variables may also be updated semiannually:

- Wholesale power price;
- Wholesale power price escalation rates;
- Wholesale power available for purchase.

The variables must be reflective of the same wholesale power products used for analysis in the IRP, so that no adjustment of the variables is needed before they can be used in the IRP or in calculating avoided cost rates. Permission must be obtained from the Commission before these variables may be updated on a semi-annual basis for

avoided cost purposes.

Staff recommends that updates to resource portfolio data, such as plant capital costs,
operation and maintenance costs, heat rates, generation capacities, plant factors, economic life, etc. not be allowed except during biennial IRP submissions. Updates to load forecasts, except for known and measurable changes as discussed previously, should also not be allowed except during IRP submissions.

Variables that go into calculating utilities' before and after tax cost of capital should be updated on a regular basis also. Staff proposes that these variables be updated biennially upon submission of new IRPs. Utilities may use estimated values for weighted cost of capital, and should assume a hypothetical capital structure reflecting the typical degree of leveraging for electric utilities with "A" grade bond ratings. Alternatively, utilities may use the weighted cost of capital as established in the utility's most recent general rate case.

To the extent they affect resource costs, the passage of new laws and the imposition of new regulations may trigger changes in variables. Staff recommends Commission approval be required however, before variables can be changed for the purpose of determining avoided costs as a result of these types of factors.

Publication of Rates

In order to provide benchmark avoided cost rates which potential QF developers can use for planning purposes, Staff recommends utilities be allowed to publish avoided cost rates for hypothetical projects. The rates should be published semiannually at the time changes in variables are submitted to the Commission. The rates should be for hypothetical 10 MW, 20 MW, and 40 MW gas-fired, non-dispatchable projects with 100% capacity factors. The rates would be non-binding on the utility and would serve only as an approximation of rates for similar projects. Alternatively, utilities may

forego publishing hypothetical rates if they can provide, within 10 working days of receiving a request, approximate rates based on IRP model runs.

Rate Quotations

Before a developer requests a rate quotation from a utility, Staff recommends a meeting be held between the utility and the developer to discuss details of the project and to discuss the process for calculating rates. Once a request for binding rates is made, Staff contends the utility should

respond to the request within 30 days. In order to receive a firm quotation, the developer must be able to provide the utility with the following information:

1. Developer name;
2. Proof of QF status (notice of self-certification will suffice);
3. Project location, and point of power delivery if the project is located outside of the state of Idaho;
4. Project size, including ambient conditions for this rating;
5. Capacity factor and proposed time shape of production;
6. Fuel source and mode and route of delivery;
7. Whether fuel supply is firm or non-firm and whether there are any constraints affecting its availability or dependability;
8. Proposed contract term (final term — length and timing — to be subject to negotiation);
9. On-line month and year;
10. Maintenance schedule;
11. Other factors affecting operation;
12. Wheeling utility(ies) between point of interconnection and point of delivery;
13. Expected delivered energy by month during heavy and light load hours;
14. Guaranteed minimum capacity.

If a project desires to be operated according to a negotiated schedule or dispatched under specific circumstances, the utility may request additional information as needed in order to provide an accurate rate quotation.

In response to a request for rates, Staff believes the utility should provide the difference in cost by year between the base case plan and the same plan with the QF included. Using an acceptable methodology, utilities should separate the annual differences in costs into capacity and energy components.

Actual contract terms should be negotiable between the utility and the developer, subject to the rules and guidelines set forth in this document. Rate quotations should be effective for a minimum of 120 days. Except for the signing of other QF contracts, the acquisition of other generating resources, or major discrete changes in load, under no other circumstances should the rate be changed during the 120-day period, even if changes occur in variables. When providing a rate quotation, utilities should be obligated to divulge whether any other rate quotation has been made for another project and is still within its 120-day effective period. In addition, utilities must agree to meet with the developer within 15 working days after the date on which the rate quotation is made.

Access to Utility Models

Utilities should be allowed to utilize any model they desire in calculating avoided costs, as long as the same model is used in the development of the utility's IRP. If the utility is required to sign a licensing agreement for use of the model that restricts its use to utility personnel only, then access to the model may be restricted to the Commission Staff, subject to restrictions of the licensing agreement. However, in order to minimize the "black box" effect created when rates are calculated by the utility using proprietary software, utilities must be willing to accommodate requests from developers and Commission Staff for a reasonable number of model runs for alternative project plans. The model runs must be meaningful and requested in support of negotiating a commercially viable contract. Staff recommends that no fee be charged by the utility for these model runs. Furthermore, utilities should have the obligation to assist developers in optimizing their projects so that developers maximize the value of their project to the utility's system. To do so is in the best interests of both the developer and the utility.

Seasonalized and On-Peak/Off-Peak Rates

Staff believes utilities should be permitted to continue to offer different rates for peak and off-peak hours, and to continue to seasonalize rates (where currently allowed for Idaho Power and Washington Water Power) using the same seasonalization factors allowed for projects smaller than 1 MW.

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